The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (original) A method for the production of glass suitable for use in an optical fiber, comprising:

dissolving an optically active component in a solvent to form a solution;

mixing the solution and a powder substrate, wherein the powder substrate is insoluble in the solvent; and

melting the solution and powder substrate to form glass at a temperature or temperature range that causes melt viscosities at less than or equal to 100,000 poise.

2. (original) A method according to claim 1, further comprising drying the solvent and powder substrate prior to melting the powder substrate.

3. (original) A method according to claim 2, further comprising decomposing the optically active component.

4. (original) A method according to claim 1, wherein the optically active component is in a precursor form.

5. (original) A method according to claim 4, wherein a co-dopant is added to the solution.

6. (original) A method according to claim 5, wherein the precursor is an organic salt, inorganic salt, or organometallic compound.

7. (original) A method according to claim 6, wherein the precursor is a nitrate, sulfate, halide, formate, acetate, oxalate, alkoxide, or Grinard reagent.

8. (original) A method according to claim 7, wherein the solvent is a member of the group consisting of: water, alcohol, ketone, aldehyde, organic acid, inorganic acid, base, liquid ammonium, or molten salt.

9. (original) A method according to claim 1, wherein the powder substrate has a particle size of about 50 to about 1200 mesh.

10. (original) A method according to claim 9, wherein the mass ratio of solution to powder is from about 0.5 to about 10.

11. (original) A method according to claim 1, wherein the powder substrate is a powdered oxide, halide, chalcogenide, or any combination thereof.

12 .(original) A method according to claim 1, wherein the powder substrate comprises crushed or milled glass or powder.

13. (original) A method according to claim 1, wherein the ratio of melt viscosity to melt duration is 25.

14. (original) A method according to claim 1, wherein the optically active ion is an ion of a rare earth element.

15. (original) A method according to claim 14, wherein the optically active ion is an ion of erbium, praseodymium, neodymium, europium, terbium, dysprosium, holmium, thulium or ytterbium.

16. (original) A method according to claim 1, wherein the optically active ion is a transition metal.

17. (original) A method according to claim 16, wherein the optically active ion is an ion of titanium, vanadium, chromium or nickel.

18. (original) A method according to claim 1, wherein the temperature or temperature range causes melt viscosities at less than or equal to 20,000 poise.

19. (original) A method according to claim 1, wherein the temperature or temperature range causes melt viscosities at less than or equal to 2,000 poise.

20. (original) A method according to claim 1, wherein no more than 10% of the powder substrate dissolves in the solvent.

21. (original) A method according to claim 20, wherein no more than 1% of the powder substrate dissolves in the solvent.

22. (currently amended) A method for the production of an [[An]] optical fiber comprising optically active ions having an unbleachable loss of 1% or less of the peak of absorption, ~~produced by a method~~ the method comprising the steps of:

dissolving an optically active component as a solute containing at least one transition metal element in a solvent to form a solution wherein the solute chemically breaks down in the solvent to form a plurality of optically active ions;

mixing the solution and a powder substrate in the form of sand, wherein the powder substrate is insoluble in the solvent and a mass ratio of solution to powder is from 0.5 to about 10 such that the plurality of optically active ions is uniformly dispersed with the sand for minimizing intra-ionic cross relaxation to form doped sand;

melting the doped sand to form glass at a temperature or temperature range that causes melt viscosities at less than or equal to 100,000 poise;

and

drawing the glass into the fiber comprising the plurality of optically active ions having the unbleachable loss of 1% or less of the peak of absorption.

23. (currently amended) ~~An optical fiber~~ The method of claim 22, wherein the solute is a salt for enabling the unbleachable loss of 0.25% or less.

24. (currently amended) An optical fiber comprising a plurality of sand particles doped with a solute of a transition metal element wherein the solute is dissolved in a solvent to form a solution for the solute to chemically break down in the solvent to form a plurality of optically active ions such that when the solution is mixed with the plurality of sand particles to form doped sand in advance of melting and drawing into a core glass, the plurality of optically active ions is uniformly dispersed with the plurality of sand particles for minimizing intra-ionic cross relaxation such that the core glass formed has an unbleachable loss of 1% or less of the peak of absorption[[.]], wherein the fiber is made by the method of claim 1.

25. (original) An optical fiber of Claim 24, further comprising a solute of aluminum for co-doping with the solute for minimizing the unbleachable loss to 0.25% or less.

26. (original) A method for the production of composition suitable for melting into a glass suitable for use in an optical fiber, comprising:

dissolving an optically active component in a solvent to form a solution, wherein the optically active component is soluble in the solvent; and

mixing the solution and a powder substrate, wherein the powder substrate is insoluble in the solvent.

27. (original) The composition produced by the method of claim 26.

28. (previously presented) An optical fiber of claim 22, wherein the fiber comprises a cladding and a core and the plurality of optically active ions are located in the core wherein the solute containing the optically active component is dissolved in the solvent

comprising water to form the plurality of optically active ions for mixing with the powder substrate to form the core.

29. (previously presented) An optical fiber of claim 28, wherein the core comprises a silicate glass.

30. (currently amended) An ~~otical~~ optical fiber of claim 29, wherein the core comprises one Group IIIB element.

31. (previously presented) An optical fiber of claim 29, wherein the core comprises one element selected from erbium, praseodymium, neodymium, europium, terbium, dysprosium, holmium, thulium and ytterbium.

32. (previously presented) An optical fiber of claim 28, wherein the optically active ion is an ion of erbium, praseodymium, neodymium, europium, terbium, dysprosium, holmium, thulium, or ytterbium.

33. (previously presented) An optical fiber of claim 28, wherein the optically active ion is an ion of erbium.

34. (previously presented) An optical fiber of claim 28, wherein the optically active ion is an ion of titanium, vanadium, chromium or nickel.

35. (previously presented) An optical fiber of claim 24, wherein the fiber comprises a cladding and a core and the solute is a salt of the transition metal element wherein the salt is dissolved to form the plurality of optically active ions that are located in the core.

36. (previously presented) An optical fiber of claim 35, wherein the plurality of sand particles has a particle size of about 50 to about 1200 mesh for maximally mixing with the solution to form the core glass.

37. (previously presented) An optical fiber of claim 36, wherein the core comprises one Group IIIB element.

38. (previously presented) An optical fiber of claim 36, wherein the core comprises one element selected from erbium, praseodymium, neodymium, europium, terbium, dysprosium, holmium, thulium and ytterbium.

39. (previously presented) An optical fiber of claim 35, wherein the optically active ion is an ion of erbium, praseodymium, neodymium, europium, terbium, dysprosium, holmium, thulium or ytterbium.

40. (previously presented) An optical fiber of claim 39, wherein the salt is a hydrate of erbium wherein the hydrate is dissolved to form a plurality of optically active erbium ions for mixing with the plurality of sand particles to form the core glass.

41. (previously presented) An optical fiber of claim 35, wherein the optically active ion is an ion of titanium, vanadium, chromium or nickel.

42. (previously presented) An optical fiber of claim 35, wherein:

a composition of the core glass from decomposition of the salt into an oxide is mol %, oxide basis comprises:

SiO_2 71.8;

$2(AIF_3)$ 3.0;

Al_20_3 0.4;

Sb_2O_3 24.76 and

Er_20_3 0.04; and

a composition of the cladding glass in mol %, oxide basis comprises;

SiO_2 77;

$2(AIF_3)$ 2; and

Sb_2O_3 21.